

# New Mexico Water Data Initiative



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[newmexicowaterdata.org](http://newmexicowaterdata.org)

# New Mexico is facing numerous water challenges



- Average temperatures warming 5-7°F over next 50 years
- Increasing aridity
- Decreasing water supply due to less snowpack, less runoff, and less recharge
- More variable and extreme precipitation
- Increasing wildfire
- Reduced surface water quality



Diffuse groundwater recharge map



<https://geoinfo.nmt.edu/ClimatePanel/report/home.html>

# 2019: NM House Bill 651 - Water Data Act



1 AN ACT

2 RELATING TO WATER; ENACTING THE WATER DATA ACT; DIRECTING  
3 AGENCIES TO IDENTIFY AND INTEGRATE KEY WATER DATA SETS;  
4 PROVIDING DUTIES; DIRECTING THE ESTABLISHMENT OF A WATER DATA  
5 ACCOUNT.

6  
7 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF NEW MEXICO:

8 SECTION 1. SHORT TITLE.--This act may be cited as the  
9 "Water Data Act".

10 SECTION 2. DEFINITIONS.--As used in the Water Data Act:

11 A. "agencies" means:

- 12 (1) the bureau of geology and mineral  
13 resources of the New Mexico institute of mining and  
14 technology;
- 15 (2) the interstate stream commission;
- 16 (3) the office of the state engineer;
- 17 (4) the department of environment; and
- 18 (5) the energy, minerals and natural  
19 resources department;



<https://www.nmlegis.gov/Sessions/19%20Regular/final/HB0651.pdf>

# Water Data Act becomes law (NMSA 1978, §72-4B)



State agencies will collaborate with regional and national efforts to **SHARE**, **INTEGRATE**, and **MANAGE** water data.

- *Convener:* Bureau of Geology and Mineral Resources
- Office of State Engineer
- Interstate Stream Commission
- Environment Department
- Energy, Minerals and Natural Resources Department



# Current access to data – Requires expertise



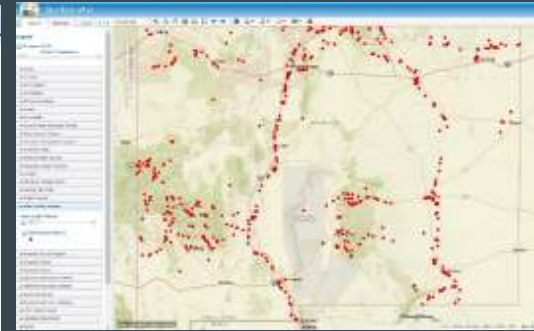
New Mexico Office of the State Engineer  
Administering New Mexico's Water Resources

Water Quality | Water Quantity | Water Rights | Water Safety

Here are 3 common ways to search our site:  
Gallery | Search Bar | Topic Ribbon

NATIONAL HERITAGE  
NATIONAL HERITAGE SYSTEM

Snake Snake | Snake Snake | Snake Snake | Snake Snake



RGIS  
REGIONAL GEOGRAPHIC INFORMATION SYSTEM

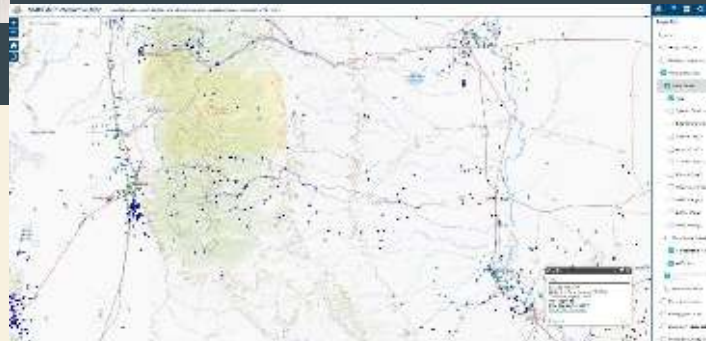
DIS - NEW DATA PORTAL

Drinking Water WBO

Public Water Supply System Search Parameters

Water System No. | Public System Type | Principal Water System | Water System Type | Primary Water System Type | Point of Interest Type

Search Search Parameters

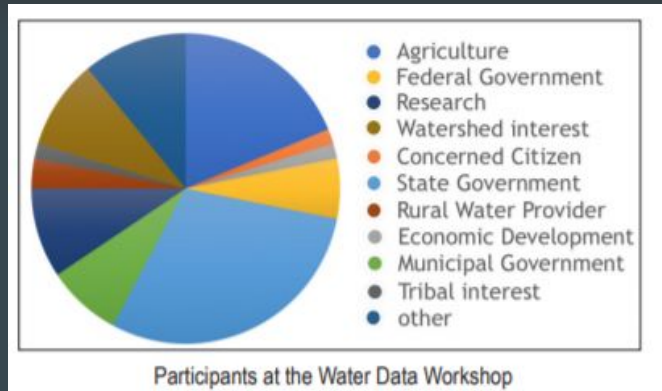


# Stakeholder questions and needs drive our work toward open data



## From what we hear, the needs for data are:

- To find data in one place
- Geospatially-based data searchable using maps or locations
- Metadata to indicate sources of data, quality, and intent of data collected
- A range of users can access
- Easy access to for download and use



# We have two paths for data sharing and access - so far



## DATA CATALOG

Data are discoverable by listing data on our catalog

Open source and community driven



<https://catalog.newmexicowaterdata.org/>



## FEDERATED DATA MODEL

Data are shared by API, following specific data standard (OGC's SensorThings)

Applications developed using these robust and dynamic APIs



# Explore the data catalog

- Initial data inventory
  - Illuminate the different data sources
  - Evaluate data readiness
- Promotes engagement
  - Feedback on data (do we have it all?)
  - Build interaction with data
- Launching point for future refinements

9 GROUPS

49 SOURCES

128 DATASETS

New Mexico Water Data

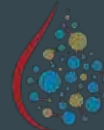
New Mexico Water Data

A collection of water data - for effective water management and planning.

Search datasets

Try Water use or Groundwater Levels

catalog.newmexicowaterdata.org



Search organizations...

49 organizations found

Order by: Name Descending

Western Regional Climate Center

USGS

U.S. FOREST SERVICE

US Fish and Wildlife Service

USDA

United States Census Bureau

EPA

US Env Protect

6 datasets found for "groundwater levels"

NIMQMR groundwater level measurements

Manual groundwater levels for wells in the state of New Mexico.

Collaborative Groundwater Monitoring Network

The Collaborative Groundwater Monitoring Network is a statewide well measurement network, with a variety of wells (i.e. pressure, acoustic, and manual).

Elegant Butte Irrigation District Groundwater Data

Groundwater data within EIID region, including shallow groundwater wells, nested piezometers, and...

Seven Rivers Monitoring Network

ISC measures groundwater levels monthly in a network of wells in and surrounding its Pecos Settlement in the Seven Rivers area.

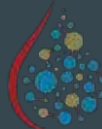
NIMQMR Interactive Map

An interactive map of data maintained by the NM Bureau of Geology. This includes water quality levels, and AMP study area data. Groundwater level data points.

Built in CKAN platform (open source) hosted on Datopian cloud



# Water use data can be found in data catalog + more to come



New Mexico Water Data

ABOUT DATA ORGANIZATIONS GROUPS REGISTER

Organizations / New Mexico Office of the State Engineer / Water Use Report 2015

## Water Use Report 2015

Dataset Groups Activity Stream Manage

Followers  
**1**  
Follow

Organization



New Mexico Office of the State Engineer & Interstate Stream Commission

## Water Use Report 2015

New Mexico Water Use by Categories, developed in 2015 by the Office of the State Engineer. These data represent estimates of water used in various sectors in New Mexico, provided here in several formats.

### Data and Resources

 <b>Water Use 2015</b> 2015 Water Use Report Data	<a href="#">More Information</a>	<a href="#">Download</a>
 <b>Metadata</b> Metadata and Disclaimer	<a href="#">More Information</a>	<a href="#">Download</a>
 <b>WaterUse2015.xlsx</b> Excel version of Water Use 2015 Report	<a href="#">Preview</a>	<a href="#">Download</a>

2015 NM Office of the St... NMOSE OSE Report Water Use

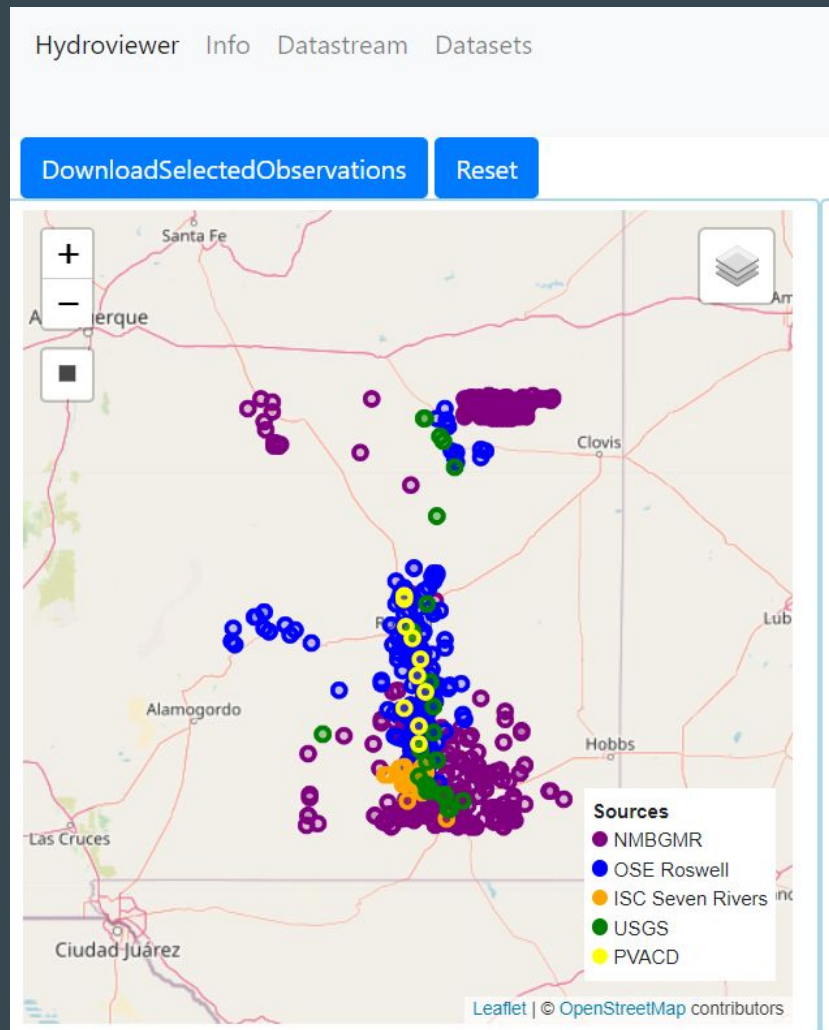
# Water use data can be challenging to collect



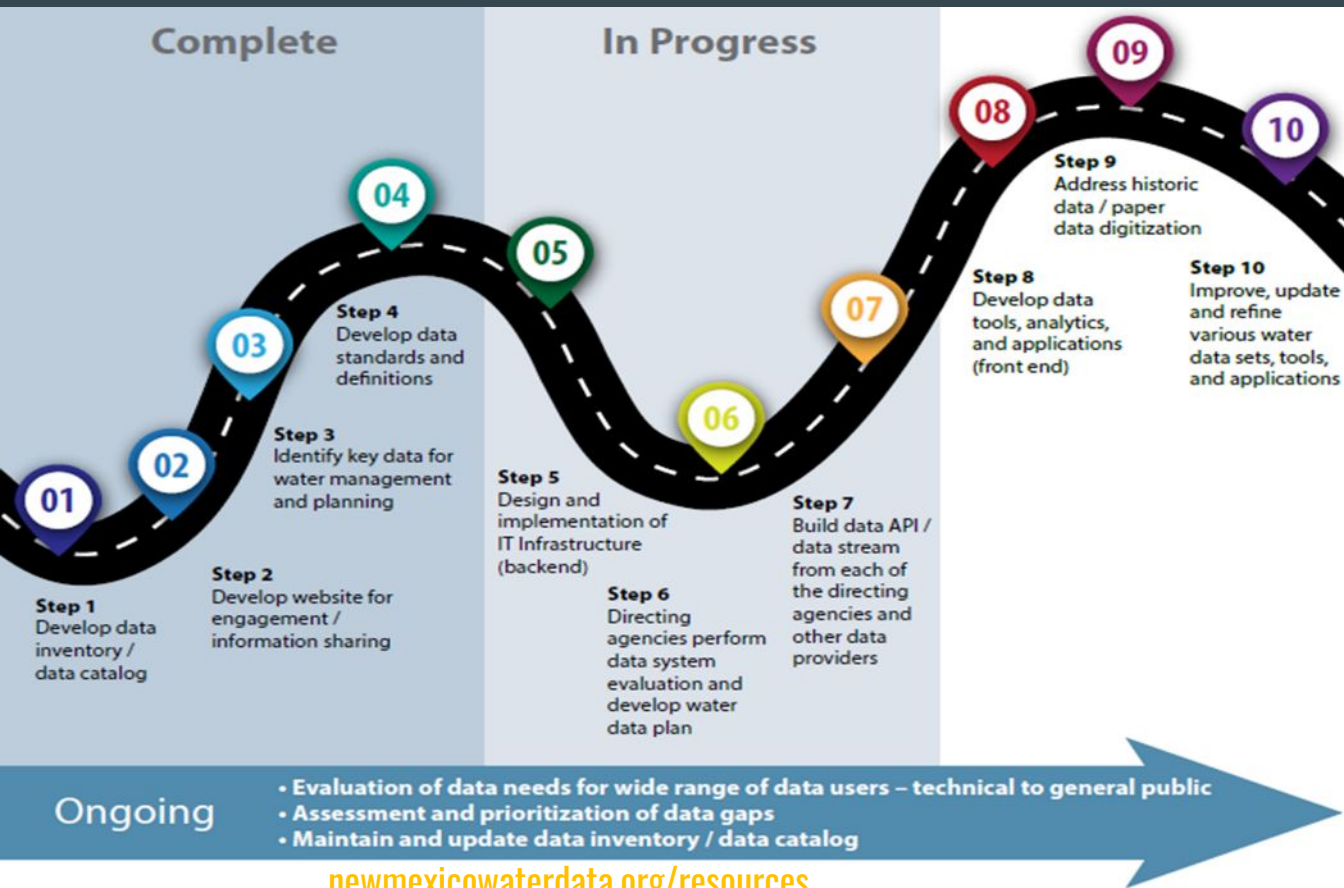
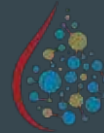
# Successful outcomes of modern data

- Interoperable datasets using SensorThings APIs – several example applications in development
- Increased findability – external data uses
  - Example: Public water systems boundaries

*“Using the water data website to access the different agencies data is so much easier than directly searching on their site! Thank you!”*



# Current focus on integration and data connections



## Future years

- Greater data integration
  - Regional networks
  - Added collaborators
- Addressing data gaps
- Application development and data visualizations

# Huge thanks to our collaborators and supporters



- Staff contribution and management support at OSE, ISC, NMED, EMNRD, NMBGMR and NMT
- Funding from State of New Mexico, Healy Foundation, U.S. Bureau of Reclamation (WaterSMART), Thornburg Foundation
- Collaboration from Internet of Water Coalition, Sandia National Laboratories, Earth Data Analysis Center at UNM, Datacequia, Sol Web Solutions, Wellntel, and Moxiecran Media
- Legislative support for water data funding from Congresswoman Melanie Stansbury, Rep. Gail Armstrong, Rep. Andrea Romero, Sen. Antoinette Sedillo Lopez, Rep. Tara Lujan
- We appreciate our regional collaborators and advocates for water data!

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